Chapter 17

Archaeological investigation of the Robert Portner Brewing Company site

> *The construction of cellars has almost ceased, for the reason mentioned, that their temperature is influenced by the heat of the ground during the winter, and also because of difficult or almost impossible ventilation.*
>
> H.S. Rich & Co. One Hundred Years of Brewing (1903)

> *Just that cheap beer they makin' now.... It ain't good as Portner's.*
>
> Henry Johnson, 1983

In the late 1970s, as a direct response to "urban renewal" redevelopment in the heart of the historic city, the City of Alexandria formed a municipal agency responsible for conducting archaeological investigations and curating and interpreting local artifact collections. By the early 1990s Alexandria Archaeology was also responsible for enforcing an archaeological ordinance that requires documentary research and the testing or excavation of many development sites.

The first controlled excavation of any part of the Robert Portner brewery property occurred in 1994. City archaeologists monitored the demolition of the rear of the 1901 ice plant and excavation behind it along Pitt Street in preparation for a mixed-use office/residential development. Little was discovered except for a lot of brick rubble, a few bottle sherds, and clumps of purple-stained refuse and clay, presumably residue from Eddie Portner's 1908 ink factory across Wythe Street (see Chapter 14). Backhoe excavation of the rear (east side) of the 1912 bottling house during the winter of 1997-1998, prior to the construction of "Portner's Landing," a residential project, produced no evidence of the brewery's large, *circa* 1898 stable. Demolition within the bottling house itself did not reveal evidence of any tunnel under Saint Asaph. (Alexandria Archaeology site files)

In 1998 a developer proposed demolition of the former Woodward & Lothrop department store (later Mastercraft Interiors) building at 615 North Washington Street to make way for a multiple-story office and retail development to occupy the entire block. The store stood directly atop the old Portner house site, and its rear parking lot included the former location of the brewing plant and cellars. Because the new construction required very deep foundations, it was clear that any remnants of the former brewery would be destroyed. Developer Saul Centers, Inc. and Alexandria Archaeology agreed that a private cultural resources management firm would be engaged to perform testing and, if necessary, more extensive ("Phase II") excavation to recover physical evidence related to Portner's old firm. Parsons Engineering Science, Inc. of Fairfax, Virginia was selected for the work.

Fieldwork began at the end of October 1998 and concluded in January 2000. Initial trenching through an extensive fill soil and rubble layer revealed a variety of structures at a level that

Above: The east side of the 600 block of North Washington Street. Saul Centers' commercial development on the brewery site was completed in 2001.

Left: A 1952 Washington Post *photo of a beer vault unearthed in the "Woodies" demolition.*

suggested they would have been located at the very lowest points of the brewery's interior. Clearly, mid-twentieth-century demolition and grade modification had been extensive. For example, a 1952 *Washington Post* article describing preparation of the Woodward & Lothrop store site reported, in addition to old lager cellars, "a concrete mound on the site, 30 feet square with walls, hand mixed and laid in strips, 6 feet thick. It held heavy equipment." Very likely the floor of the engine/boiler room northwest of the 1894 brewhouse, it then had to be demolished gradually with jackhammers, after more dramatic methods failed, in order to proceed with grading and excavation for the store. (*Washington Post* March 2, 1952)

Structural features unearthed in the 1998-2000 excavations could be divided into several categories: bearing wall foundations; partition or platform footings; column bases or footings; equipment mounts; flooring; and water source or storage features. Backhoe trenching was useful in quickly fixing the locations of the various sections of the 1868 brewery and the 1893-1894 brewhouse and suggesting where further excavation would be required.

Naturally, the uncovered features represent the arrangement of the brewery at its latest date—i.e., at the time of its closure in 1916 or even later. Interpretation of the structural remains therefore mainly relies upon the latest pre-Prohibition insurance maps (1907 and 1912) and the 1894 description of the "new" brewhouse.

Notable was the relative absence of individual artifacts related to brewing or identified with the company. This can be attributed to three factors. First, cleanliness was the first commandment in a brewery, in order to protect the beer from microbial contamination and souring during fermentation or thereafter. The "modern" brewery was also a very mechanized place; machinery had to be kept clean and well maintained to remain in working order. For these reasons, the brewery was kept spotless, and its site was no depository for refuse. Second, between the time the brewery closed and when it was clear that it would never reopen, Robert Portner's sons almost certainly sold the brewing equipment to other firms or as scrap. By the time the buildings were demolished in 1935, there would have been little remaining inside them. Third, many of the operations, including bottling, occurred across Saint Asaph Street, and expensive materials such as glass were recycled. Finally, the 1935 demolition and debris removal and the later demolition, re-grading and excavation for the Woodward & Lothrop building would have been extensive, accomplished by mid-twentieth-century, internal combustion-driven, earth-moving equipment. Only a few possibly brewery-related loose, metal objects were unearthed, including a large iron strap hinge, a wall or beam anchor, some steel and copper pipe, and some sort of reciprocating machine part.

Demolition, re-grading and excavation were undoubtedly responsible for removing traces of most of the brewery's accessory structures. Test trenches near Pendleton Street and along Washington Street failed to produce evidence of former carpentry and cooper shops and storage sheds. There was also no sign of a structure, depicted on the 1877 Hopkins map, which may have been a pre-Civil War dwelling—one of the "*kuttke*" cottages occupied by Portner, Recker and family after the war—or a building associated with Portner's beer garden. This and other frame structures on the brewery lot were probably razed in the autumn of 1878 to make way for expansion of the brewery. (*Alexandria Gazette* November 25, 1878) The 1872 Portner family house was, of

course, also long gone, demolished in 1932 and replaced by the 1952 department store. In a few spots just west of the 1868 brewery foundations, archaeologists uncovered minor sections of foundations or flooring, undoubtedly remains of the late nineteenth-century additions that contained the boilers, steam engines, electric dynamos and ice engines. In fact, in one of the first trenches, archaeologists discovered a wooden box conduit containing seven insulated wires, surely related to the plant's early electrical system.

Earlier demolition notwithstanding, the archaeology crew found, a few feet below the current grade, the massive foundations of the 1868 and 1894 brewhouses, confirming the size and location of the structures as depicted on Sanborn insurance maps. Constructed of load-bearing brick masonry, the foundation footings were as much as four and a half feet wide. There were also sections of brick flooring or walkways found within the buildings, plus possible footings for smaller partitions or brewing equipment platforms.

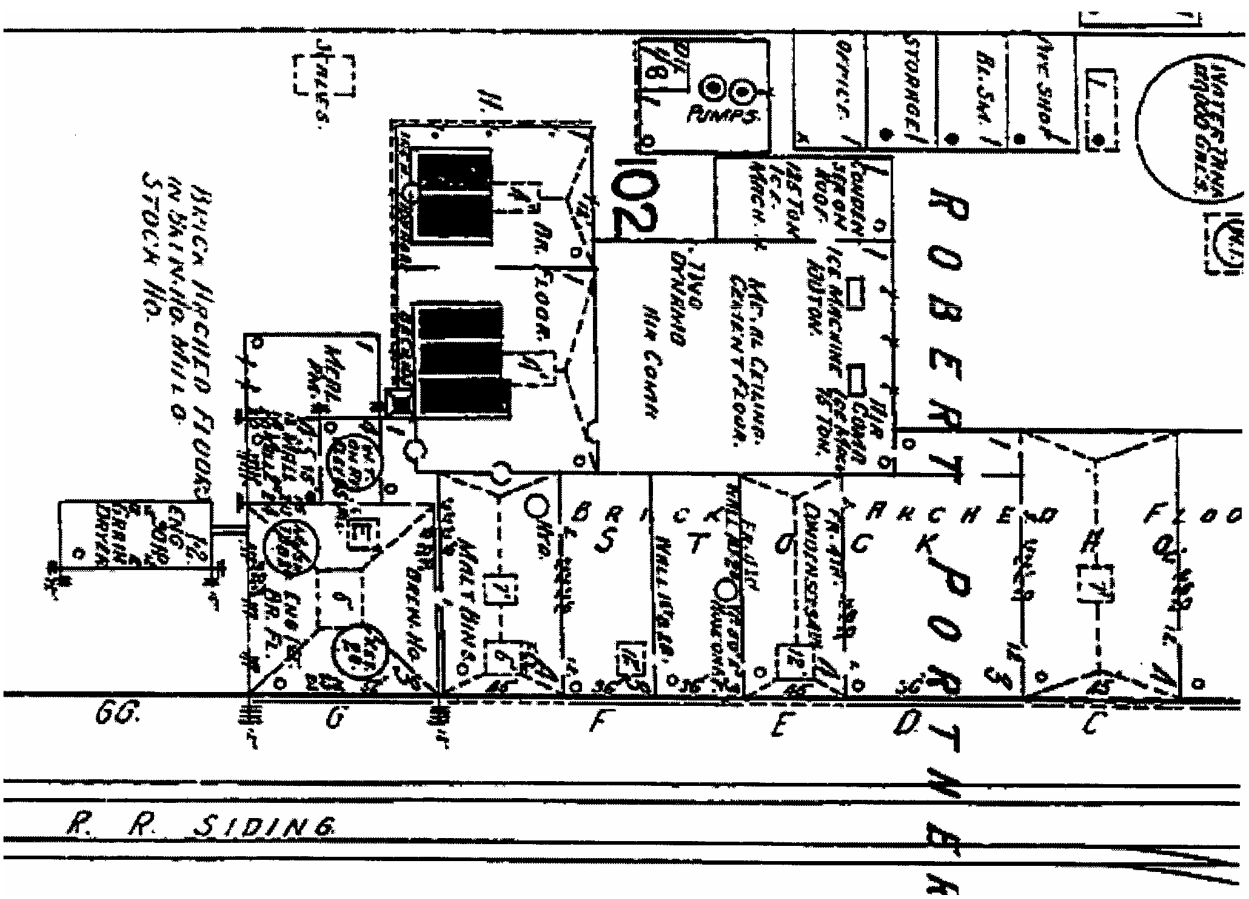
Each of the brewhouses also contained three or four dressed granite slabs about eighteen inches tall and at least four feet square, obvious piers for iron columns or mounts for equipment. In fact, most had residual iron oxide concretions on the top surface, left from the vanished posts or machinery attachments. The documentary evidence provides the basis for reasonable guesses as to the function of at least some of the stone blocks in the "new" brewhouse.

> On the ground floor of the brew house is the big hop jack and in the rear is the receiving tank holding 350 barrels. On the same floor is the new Corliss steam engine of 65 horse power, fitted with a pulley weighing four tons, and an eighteen inch wide belt.... Three steps above is the machine floor for the accommodation of the special driving device to the wash machine overhead. On a floor above, reached by a short flight of stairs, is located the kettle designed to carry the great load of 55 tons when full, its own weight being over 5 tons.... Broad flights of iron stairs lead from floor to floor and a power elevator of two tons' capacity furnishes access to all main levels. (*Alexandria Gazette* April 18, 1894; Miller 1987:364)

It is known, of course, that the steam engines were actually located *behind* the brewhouse by 1894. Nor were the mash tuns or brew kettles positioned directly above the remaining stone slabs. The granite, therefore, may have supported either the cast iron framework of the interior platforms and stairs and/or the hop jack (which added hops to the wort for flavoring, then strained them out) and/or the receiving tank for the brew on its way to the coolers. Perhaps the most likely alternative is that these stones served as the base for the brewhouse freight elevator—depicted on the 1902, 1907 and 1912 Sanborn maps as being in roughly the same location. The granite slabs in the southeast quarter of the "old" brewhouse may have also supported elevators. When that building was remodeled for barley malt storage, the first floor became the mill room for grinding malt: "On the ground floor is the malt mill with the two elevators on either side." Bricks remaining nearby suggested that there used to be a partition between this space and the area to the immediate north, where a floor-level malt scale was located at least *circa* 1885. On the other hand, blueprints dating to the 1894 construction of the new brewhouse depict the old one as given over to grain storage, with huge malt bins supported by ten-inch-square timbers set

on cast-iron plates and concrete, or possibly granite, footers (see pages 135-136). Indeed, the plant's floors may generally have been supported by similar piers; an 1881 account of a structural failure below the "beer [fermenting] room" described two stories supported by iron pillars standing upon two-by-two stone footers atop a concrete floor. (*Alexandria Gazette* April 18, 1894; Miller 1987:364; Sanborn Map Company; Alexandria Library Local History Special Collections; *Washington Post* January 7, 1881 and March 2, 1952)

The other notable features of the southern end of the brewery were water source or water storage structures. Two brick shafts were discovered within the old brewhouse, not far from the south wall. The larger measured approximately eleven feet in diameter and only seven feet deep from the elevation at which it was discovered. The other shaft was approximately 70 inches in diameter, although its upper section was distorted and irregular in shape. On its interior were remnants of a parge coat of mortar used as a water barrier—in this case, to keep water in. The shallowness of the wider shaft also suggests that both of these were cisterns for water storage and not wells for drawing ground water.



A detail of a Sanborn insurance map of 1912 showing the brewhouses, boiler house, and adjoining sections of the main plant. The map indicates both the aperture in the vicinity of the water feature at the rear of the 1894 brewhouse and the elevator "penthouse" atop the former brewhouse.

Elevator diagram from Dow's Practical Mechanical Engineering *of 1907. Some of the well or cistern-like features in the brewery may have related to the building's elevators, possibly serving as the "pit," as below, or holding the discharge tanks of hydraulic motive systems.*

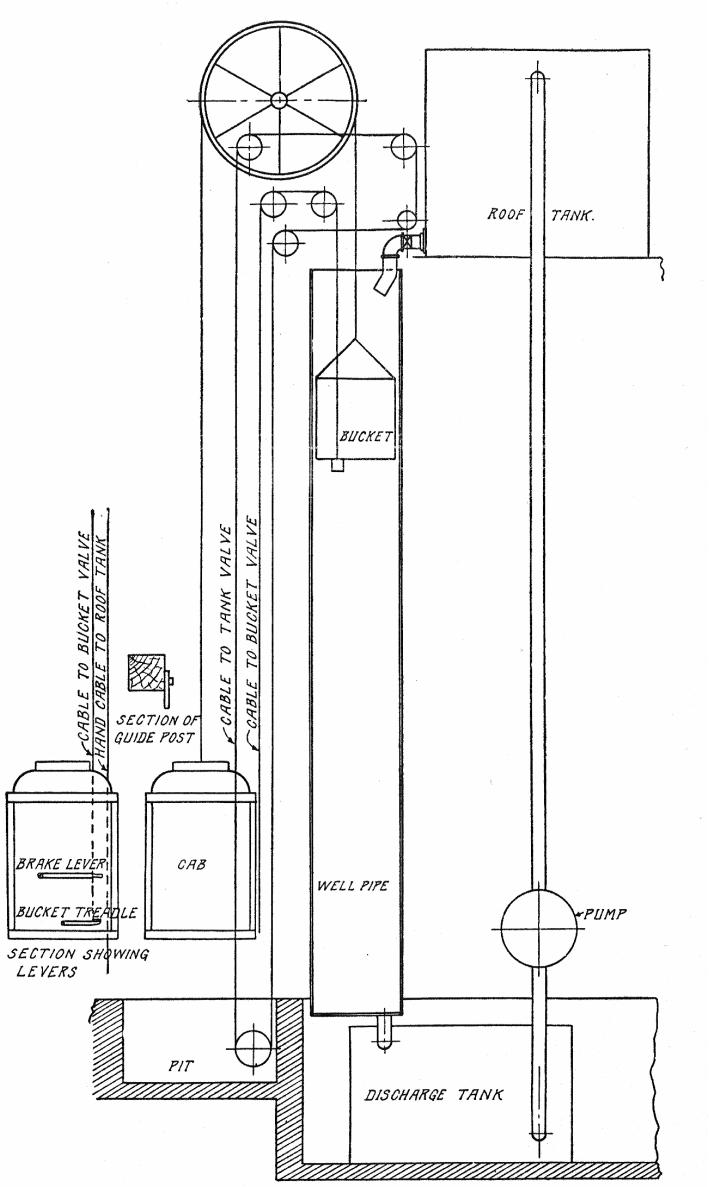


Fig. 70. Diagram of Hale Water-Balance Hydraulic Elevator

At the rear of the 1894 brewhouse—in fact, interrupting its rear wall—was a third brick shaft, ten feet in diameter, at least twenty feet deep, and showing no evidence of parging. Its location attests to the fact that it was dug prior to construction of the brewhouse, although possibly not long before. It corresponds to the location of the brewery's *circa* 1885 pump house, razed before 1891, which contained "four driven wells." The fact that the builders of the 1893-1894 brewhouse did not run the walls around this shaft or fill it in suggests that it was still in use at the time. The Sanborn insurance maps depict an aperture or passage through to the machine room at this location. The shaft may therefore relate directly to the functioning of the machinery. It or the larger cisterns could possibly be related to the hydraulic machinery used to lift the elevators. (Sanborn Map Company)

Brewing required an enormous amount of water. Water is the main ingredient of beer and the primary medium for its preparation. Simply to fill the Portner company's big brew kettle required 10,850 gallons. The production of 25 to 30 tons of ice a day required at least another 6,000 or 7,000 gallons. Large quantities were also needed as coolant and to convert the heat energy of the boiler fireboxes into steam for motive power to operate the brewery's malt mill, mash agitators, pumps, elevators, hoists, conveyors, electric generators, washers, bottling machines, etc. Cisterns or tanks also had to be available in case of fire, for cleaning purposes, for watering the company's horses, and perhaps even for the boilers of the locomotives that carried away loads of beer. In 1869 Portner probably drew his water from surface wells and possibly from the city water supply. By the mid 1880s, however, deep wells were driven far below the water table. Ranging from 330 to more than 1000 feet deep, these wells were essentially narrow pipes bored into the earth—"Artesian wells—three in number—more than supply our needs. Pure, crystal, deep-rock water, from a thousand feet below the surface." Some of the earlier water features may have been retained, either filled in or re-used for other purposes. By 1912 the brewery had had at least ten dug or driven wells, plus a number of other unidentified subterranean receptacles, not to mention large, above-ground, upper-story, and rooftop storage tanks. The location of the two shafts in the old brewhouse may roughly correspond to a "hyd[rant]," or city water inlet, depicted on the 1907 and 1912 Sanborn maps (and perhaps as early as 1885). Such structures may also have been built over the driven wells to contain pumps or serve as reservoirs for the rising and back-splashing water. For safety reasons, archaeologists could not reach the bottom of two of the three uncovered shafts and so could not determine their full depth. (Sanborn Map Company; *Alexandria Gazette* September 30, 1886; Robert Portner Brewing Company 1897)

After much searching, the perfectly preserved floor of the beer cellar was uncovered at the southwest corner of Saint Asaph and Pendleton Streets. The northernmost section of the plant, the exposed portion measured nearly 40 by 50 feet, although some of Portner's vaults may have reached 70 feet in length, but narrower.[1] This would have been the location for the fermentation and aging of much of the beer produced by the brewery in the 1880s. The concrete floor was bisected by a gutter running west to east and dropping about a foot over its course. The gutter obviously served to drain off ice melt as well as wash water and spilled beer. Immediately to the north of the gutter were the remnants of footers for a line of four vanished cast-iron columns that once supported the ground floor above. The columns were probably of identical heights; the footers grew taller as they went east, accounting for the slope in the floor. The truncated section of the cellar's western brick wall held pairs of cut spikes at two-foot intervals, nailed across each other and into the mortar joints. With tiny bits of wood still attached, they apparently held vertical scantling that would have served as furring strips for horizontal wood paneling along that section of wall.

The most remarkable aspect of the cellar was the marks left in its floor. Apparently, great weights set upon the concrete surface left a permanent series of shallow, rectangular depressions in regular rows. Each was perhaps four and a half feet long and a foot wide, at four-foot intervals

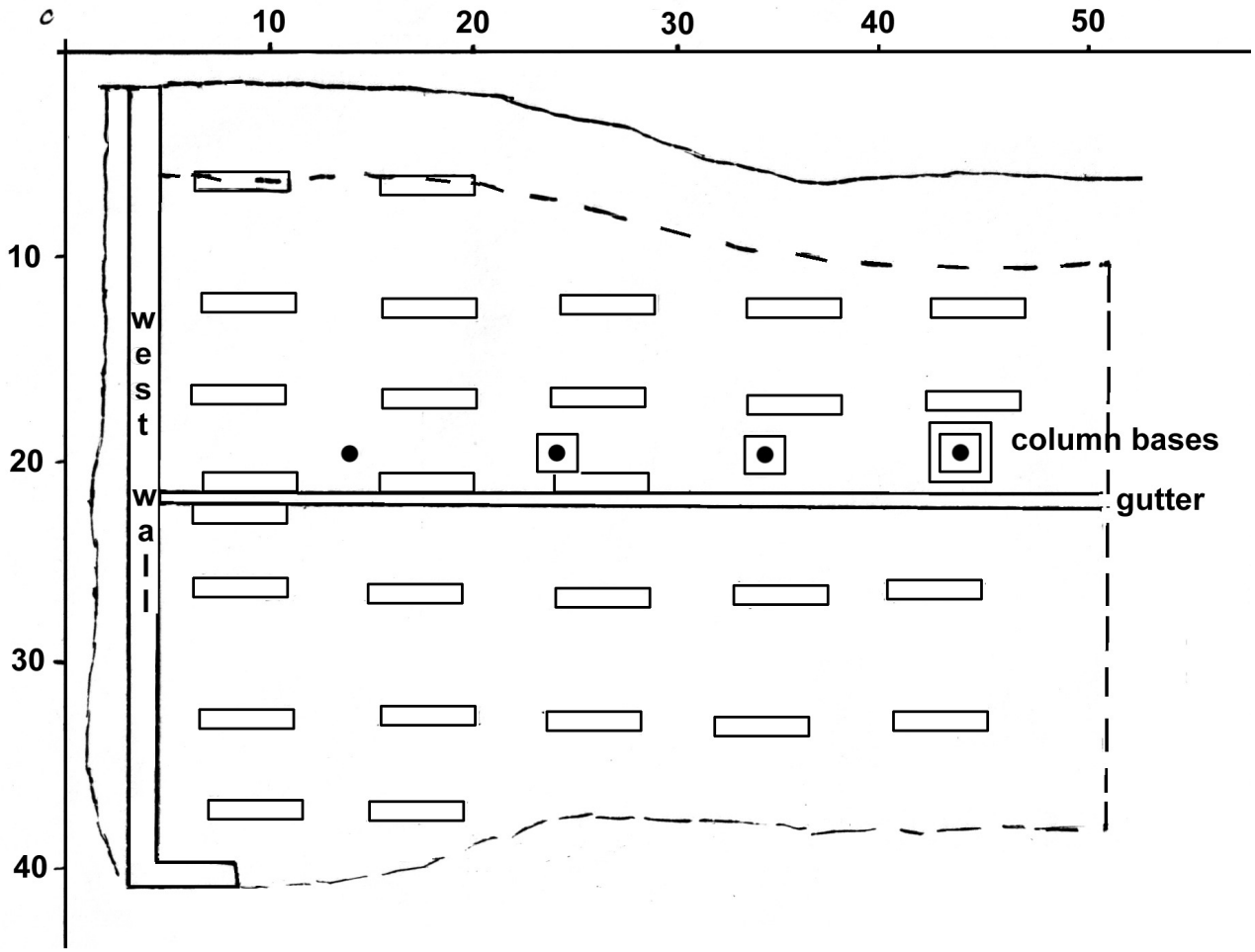
[1] The archaeologists were unable to define the edges of the room entirely, for fear of dangerously undercutting the adjacent sidewalks. A 1952 *Washington Post* article describes a beer vault of 70-foot length, fifteen-foot width and twenty-foot height with intersecting "tunnels." (*Washington Post* March 2, 1952)

from the other similar and parallel depressions. Oriented east-west, these depressions appear to have been left by the immense loads upon timber stillions or stands that once supported the large aging casks. Extrapolating from the depressions that were actually exposed, it appears that there were once four parallel rows of five casks each in the cellar.[2] Given the size and spacing of the depressions, the casks might have held well over 100 barrels of beer each. A concrete of Portland or similar cement would suggest a date for the floor consistent with the late nineteenth century. At that time, above-ground, artificially cooled spaces were increasingly employed.

Archaeologists uncovered no trace of supposed tunnels under Saint Asaph Street between the brewhouse and the 1903 or 1912 bottling houses (see Appendix B for further information).

A portion of the lager cellar floor uncovered. Alexandria Archaeology photograph.

[2] Portner's mid-1860s deeds of trust state that he then had 36 large casks of unstated capacity in his cellar.



A simplified map of the uncovered portion of the northernmost brewery cellar. The oblong shapes are the locations of depressions of the cask stands in the concrete floor. Derived from a sketch field map by Parsons Engineering-Science, Inc.